

PATENT COOPERATION TR

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BUDDE, SCHOU & OSTENFELD AS
Vester Søgade 10
DK-1601 København V
DANEMARK

Date of mailing (day/month/year) 11 April 2001 (11.04.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 16.650	
International application No. PCT/DK99/00528	International filing date (day/month/year) 06 October 1999 (06.10.99)

1. The following indications appeared on record concerning:	
<input type="checkbox"/> the applicant	<input type="checkbox"/> the inventor <input checked="" type="checkbox"/> the agent <input type="checkbox"/> the common representative
Name and Address K. SKØTT-JENSEN PATENTINGENIØRER A/S Lemmingvej 225 DK-8361 Hasselager Denmark	State of Nationality
	State of Residence
	Telephone No.
	Facsimile No.
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:	
<input type="checkbox"/> the person <input checked="" type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence	
Name and Address BUDDE, SCHOU & OSTENFELD AS Vester Søgade 10 DK-1601 København V Denmark	State of Nationality
	State of Residence
	Telephone No.
	Facsimile No.
3. Further observations, if necessary:	
4. A copy of this notification has been sent to:	
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer J. Leitao Telephone No.: (41-22) 338.83.38
---	---

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 14 June 2000 (14.06.00)	
International application No. PCT/DK99/00528	Applicant's or agent's file reference 16.650
International filing date (day/month/year) 06 October 1999 (06.10.99)	Priority date (day/month/year) 06 October 1998 (06.10.98)
Applicant PEDERSEN, Jan, Abildgaard et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

28 April 2000 (28.04.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Claudio Borton Telephone No.: (41-22) 338.83.38
--	---

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 16.650	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/DK 99/00528	International filing date (day/month/year) 06/10/1999	(Earliest) Priority Date (day/month/year) 06/10/1998
Applicant BANG & OLUFSEN A/S et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/99/00528

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04R3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 84 00274 A (B & W LOUDSPEAKERS) 19 January 1984 (1984-01-19) cited in the application page 4, line 2 - line 18; figures ---	1-15
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 07, 31 March 1999 (1999-03-31) & JP 09 233593, A (BANG & OLUFSEN AS), 5 September 1997 (1997-09-05) cited in the application abstract ---	1-15
A	WO 97 03536 A (UNIV SALFORD ; DARLINGTON PAUL (GB)) 30 January 1997 (1997-01-30) page 3, line 14 - page 5, line 5; figures -----	1-15



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

20 December 1999

Date of mailing of the international search report

24/01/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gastaldi, G

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 99/00528

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 8400274	A	19-01-1984	AU 1772783 A EP 0113370 A GB 2131651 A, B	26-01-1984 18-07-1984 20-06-1984
JP 09233593	A	05-09-1997	NONE	
WO 9703536	A	30-01-1997	AU 6364696 A	10-02-1997

PCT

REC'D 20 JUL 2000

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 16.650	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DK99/00528	International filing date (day/month/year) 06/10/1999	Priority date (day/month/year) 06/10/1998
International Patent Classification (IPC) or national classification and IPC H04R3/00		
Applicant BANG & OLUFSEN A/S et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 28/04/2000	Date of completion of this report 18.07.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Haertle, M Telephone No. +49 89 2399 8955



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/DK99/00528

1. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-7 as originally filed

Claims, No.:

1-15 as originally filed

Drawings, sheets:

1/1 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/DK99/00528

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-15
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-15
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-15
	No:	Claims	

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Item V.2.

1. Claim 1 : Novelty

The nearest state of the art is WO 84 00274 A.

None of the documents cited in the International Search Report nor the nearest state of the art discloses a sensor equipment comprising microphone means for detecting the sound pressure in at least two points differently spaced from the diaphragm, and that carrier means are provided enabling one same microphone means to be effectively and successively exposed to the sound pressure in each of the at least two points.

2. Claim 1 : Inventive Step

The combination of features according to Claim 1 cannot be obviously derived from the available state of the art or from the common knowledge of the person skilled in art.

3. Claims 2 to 15 :

Claims 2 to 15 contain particular embodiments of the subject-matter of Claim 1 and meet therefore the regulations of Art. 33 (2), 33 (3) PCT.

Item VII.

1. The features of the Claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

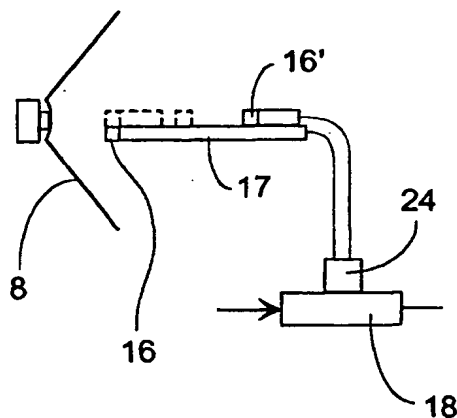
AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : H04R 3/00	A1	(11) International Publication Number: WO 00/21331 (43) International Publication Date: 13 April 2000 (13.04.00)
(21) International Application Number: PCT/DK99/00528 (22) International Filing Date: 6 October 1999 (06.10.99) (30) Priority Data: PA 1998 01256 6 October 1998 (06.10.98) DK (71) Applicant (for all designated States except US): BANG & OLUFSEN A/S [DK/DK]; Peter Bangs Vej 15, DK-7600 Struer (DK). (72) Inventors; and (75) Inventors/Applicants (for US only): PEDERSEN, Jan, Abildgaard [DK/DK]; Krunderupparken 64, DK-7500 Holstebro (DK). PLOUG, Ole [DK/DK]; Duevej 19, DK-7600 Struer (DK). (74) Agent: K. SKØTT-JENSEN PATENTINGENIØRER A/S; Lemmingvej 225, DK-8361 Hasselager (DK).		(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: ENVIRONMENT ADAPTABLE LOUDSPEAKER



(57) Abstract

It is known to make the performance of a loudspeaker "environment adaptive" in controlling a filter unit based on a measurement of the velocity/acceleration of the loudspeaker diaphragm and the associated sound pressure in front of the diaphragm, by means of an accelerometer and a microphone, respectively, thereby determining the radiation resistance of the diaphragm. The two sensors have to exhibit a constant transfer function throughout the life time of the loudspeaker, which make them very expensive. With the invention it has been found that the accelerometer can be replaced by another microphone held in a small distance from the diaphragm, and this conditions the possibility of using the same microphone for both measurements, e.g. simply by physically moving the microphone from one position to another. It will then no longer be required to use long-time stable sensors, whereby the price of the sensor equipment can be reduced dramatically. Also alternative arrangements are disclosed.